INNOVATIVE APPROACHES IN THE ORGANIZATION OF INDEPENDENT WORK OF APPLICANTS FOR HIGHER EDUCATION IN THE CONDITIONS OF INFORMATION EDUCATIONAL ENVIRONMENT

AUTHORSHIP

Olena Kirdan
Department of Pedagogy and Educational Management, Pavlo Tychyna Uman State Pedagogical University, Ukraine.

ORCID: https://orcid.org/0000-0002-7295-4722
E-mail: Kirdan@ukr.net

Vera Romanova
Department of Social Work, Taras Shevchenko National University of Kyiv, Ukraine.

ORCID: https://orcid.org/0000-0002-8775-8775
E-mail: Romanova@gmail.com

Sergiy Prokopov
Department of Pedagogy and Educational Management, Pavlo Tychyna Uman State Pedagogical University, Ukraine.

ORCID: https://orcid.org/0000-0002-5892-6290
E-mail: Prokopov@gmail.com

Nadiia Bilyk
Department of Pedagogical Skills and Inclusive Education, M.V. Ostrogradsky Poltava Regional Institute of In-Service Teacher Training, Ukraine.

ORCID: https://orcid.org/0000-0003-2344-5347
E-mail: Bilyk@gmail.com

Iryna Tsisaruk
Department of Theory and Methods of Technical Education and Technologies, Kremenets Regional Humanitarian and Pedagogical Academy named after Taras Shevchenko, Ukraine.

ORCID: https://orcid.org/0000-0003-7285-9055
E-mail: Tsisaruk@gmail.com

INTRODUCTION

Independent work can be considered a form of learning, but because it allows you to form the necessary student learning skills, it can be considered as a means of learning. Under the independent work of students, we understand such activities aimed at solving cognitive tasks for the acquisition of basic and special competencies through the implementation of specific educational tasks under the guidance of a teacher. This definition allows us to say that the level of learning material, the formation of competencies largely depend on how to build the learning process, with which methods to involve students in independent work.

The essence of independent work is the presence of specially organized activities of students; availability of the result of activity; availability of technology of the learning process. These parameters allow us to define independent work as a specially organized systematic educational activity based on a certain technology of the learning process and aimed at the development of cognitive and creative activity of the individual.

As signs of independent work of students we will allocate the following: existence of a cognitive or practical task, a problem question, special time for their performance; manifestation of mental stress for the correct and best performance of a particular action; manifestation of consciousness, independence and activity of students in the process of solving tasks; implementation of management and self-government of independent, cognitive and practical activity of the student. Thus, the core of independent work is a cognitive or problem task that determines its entire process.

In contrast to most of the known classifications, built on one basis (for example, didactic goals, source of knowledge, teaching methods), in our study, independent actions are systematized on 9 grounds: content orientation, didactic tasks, teaching methods, features of cognitive activity, on features of mental actions, on features of the organization and management, on a form of carrying out, on a place of carrying out, on a form of expression of final result. In the pedagogical literature there are four levels of independent activity of students:

- actions that copy;
- reproductive activity;
- productive activity;
- independent activity.

According to the levels of independent activity of students, there are usually four types of independent work:
- reproducing according to the sample;
The reorientation of the educational paradigm to the development of personal qualities of a professional requires a change in the purpose of independent work as a form of organization of the educational process. Such a goal should be the development of creative thinking of the future specialist, his internal and external self-organization, actively transforming the attitude to the received information. Independent work should be considered as a process of solving a creative task that includes several stages.

1. **Reconstruction** of the educational process aiming to develop personal qualities of a professional.

   - **Reconstructive independent work** (teaches to analyze events, phenomena, facts that contribute to the development of internal motives for cognition);
   - **Variable** - forms the ability and skills to find the answer outside the known pattern;
   - **Creative**, which is the top of the system of independent student activity (LAZORKO, ZHANNA, YAHUPOV, VALCHUK-ORKUSHA, MELNYK, SHERMAN, 2021).

2. **Information search.** Determining the methods of finding the “unknown new”, we rely on the knowledge gained in the process of learning and previous activities (update past experience). Determine the direction of the search for the necessary, but still missing information, the types of its sources.

3. **Analytical and synthetic information processing; staging an experiment.** The content of this stage is the perception, understanding, comprehension of the received information, its evaluation, establishing links between disparate facts and phenomena, generalizing them and presenting them in a logical (symbolic) form. It is as a result of analytical and synthetic processing of information passes into knowledge.

4. **The final stage of solving a creative task is dissemination.** The result obtained by an individual subject in the form of his “export model” becomes the property of others, enters into public circulation. Therefore, the written design of the results is a necessary final stage of solving a creative task.

5. Depending on the specific educational tasks that must be solved in the process of independent work, the content, the duration of individual stages vary. However, their presence in the structure of the process is mandatory. This helps the future specialist to realize himself not only as a consumer of ready-made knowledge, but also as its interpreter, disseminator of new knowledge.

The main element of independent work is a cognitive task. The educational task is a formed task aimed at finding new knowledge that requires a solution in the course of observation, experience, study of literature and other types of cognitive activity. As a didactic unit, the educational task has a number of functional features:

- contains the driving contradiction between the given and the sought;
- includes all parts of cognitive activity: goal setting, motivation, choice of rational solutions, selection of methods of action and means of their implementation, obtaining the result, its analysis;
- acts as a means of logical and psychological organization of educational material;
- integrates the processes of knowledge acquisition and experience formation, which is necessary for mastering competencies.

The process of scientific and information activities is aimed at the development of intellectual and logical abilities (formation of skills to analyze, compare, summarize, highlight, explain, prove, substantiate, teach, systematize, classify, model); intellectual and heuristic abilities (ability to generate ideas, imagination, associative thinking, vision of contradictions; ability to set tasks, hypothesize) and the ability to express their thoughts in writing, concise them, describe, design the results of scientific research.
An important role in the training of future professionals is played by scientific activity, which not only organizes and deepens the knowledge gained in the process of educational work, but also helps to adapt to many forms of educational activity. Scientific research in most cases is independent, so it is especially important to properly organize the scientific activities of a student of higher education.

The use of information technology in the educational process leads to a reduction in volume and at the same time complicates the activities of the teacher to support the educational process. For example, not only classroom classes are used for mastering theoretical lecture material, but also a system of pedagogical support is created, which includes counseling, current control, computer testing, work with educational and methodical materials. The structure and such forms of educational activity as control, consultations and independent work of students become more complicated. At the same time, the goals of consultations are changing: they are now more subject-oriented to help students master the theoretical material of the course, acquire practical skills, conduct a laboratory workshop, etc.

After analyzing all the above, we can conclude that the use of information technology in the educational process increases the volume and expands the organizational forms of independent work of students. In reality, the increase in the share of independent work of students leads to a decrease in the workload of the teacher.

Of course, in the organization and control of independent work of students, the computer is an effective and reliable assistant. It allows to reduce time of search of the necessary information, to bring in training an element of game, to instill taste to independent employment, to develop figurative thinking, etc. In each case it is necessary to identify those areas of the educational process where the use of new information technologies gives a new quality.

THE INITIAL PRESUPPOSITIONS
Theoretical: analysis of the literature on the research problem; - empirical: included observation, questioning, testing, analysis of products of activity, forming an experiment; data processing methods: quantitative and qualitative analysis of research results; - methods of mathematical statistics: in order to assess the reliability of the shift in values - the use of the Student’s t-test for dependent measurements and the homogeneity criterion.

METHODS
The group of methodical measures to ensure the effectiveness of the process of formation of students’ academic competencies includes:

- purposeful work during training sessions (lectures, seminars, internships, preparation of diploma projects);
- methodical support of independent work;
- development of modern control methods.

When organizing training in the context of scientific and information activities, seminars, practical classes in structural terms are a consistent change of problem situations in which independent tasks are performed - individually, in groups, face to face. The basis of the proposed tasks are pre-collected by the students themselves, organized by them in the form of an information product, as well as didactic handouts prepared by the teacher (educational texts, cards for individual, group and frontal work). The teacher takes an active part in the lesson, implementing the motivational and managerial functions.

The role of the seminar as a form of organization of university classes is extremely large, primarily because it is, in fact, organized on the basis of maximum involvement of students in independent work in preparation for it and as much their maximum activity in discussing the topic in class. In preparation for the seminar, students develop such important skills in working with literary sources as the selection of material and its logical processing in accordance with the clarification of a particular problem, literary design of results in preparation for the seminar (plan, abstracts, notes, extracts, etc.).
The purpose of the seminar will determine the most effective methods in this case. Depending on the purpose and methods of its implementation, seminars can be divided into the following most common types: conference, seminar-conversation (interview), discussion, combined seminar. Almost all courses of university specialist training are accompanied by practical classes. In junior courses, practical classes are a kind of school of mental work.

These classes include such types of work as: performing standard calculations; laboratory and other work, which are mainly training in nature (problem solving, acquisition of skills in the use of equipment; testing of knowledge gained in lectures, seminars and independently). As a result, the forms of practical classes can be different: observation, study and analysis of professional experience, development (development of plans, programs, activities) of educational work with children, solution of cognitive-practical problems, typical calculations (IASHEKO, KHARLAMOV, SKRYPCHUK, FADYEYEVA, GONTARENKO, SVIATNAIA, 2021).

Any independent work is effective if it is well equipped with a textbook, monograph, equipment (for example, computer programs, spreadsheets, other illustrative materials, audiovisual media). Often in educational activities is limited to work with educational literature, oral and written assignments to the classroom. Much less often students are entrusted with the production of teaching aids: handouts, tables, drawings, models, audio-video recordings, photographic documents, etc. In the conditions of informatization of education such tasks as involvement in preparation of the software, to participation in work on creation of a data bank, knowledge base, to development of other ways and means of storage and distribution of the information, to preparation of advertising of educational opportunities of high school acquire special value.

In order to improve the quality of training, it is necessary, along with the communication of certain program information, to more actively manage the process of obtaining and assimilating knowledge by students in their independent work. A certain contribution to the solution of this problem should be made by more careful development and implementation in the teaching process of modern, scientifically based educational and methodical manuals, which according to the methods of presenting knowledge deviate from the traditional performance typical of most educational literatures.

At the same time, textbooks should perform not only informational, but also organizational, control and management functions. The management function of the textbook is manifested:

...under the heading, in the textual selection of the main provisions of the educational material, in the presence of structural and logical schemes that reveal the relationship of educational materials, in generalizing conclusions (CORR, GRAY, 1996).

To increase the efficiency of the student's independent work, textbooks should also be supplemented with textbooks that perform only a guiding and guiding role. The content of such a manual should indicate in what sequence the material of the discipline should be studied, pay attention to the study of individual topics and sections, help select the most important and necessary information from the content of the textbook, and explain the program issues that usually cause the most difficulties and lead to mistakes. The organizational and controlling function of the textbook is manifested in the transition to active forms of learning, which contributes to the development of independent work in the skill. However, mental activity, which allows the student to fully disclose their abilities and accelerate the process of assimilation of information, must be organized in the learning process.

One of the methods of intensifying educational activities can be to create a problem situation. Problem situations put the student in front of the need to make a choice in the decision-making process, which shapes not only his will, but also his thinking. Putting the student in front of the need to choose and make a decision can be realized with the help of management-type textbooks, which create conditions for self-control and self-correction in the process of self-study of program material.
This kind of manual consists of three parts. The first includes an informational text compiled on the basis of the program of the discipline, studying which, the student gets the opportunity to determine the amount needed to master the material. If there is a textbook for this course that corresponds to the curriculum, this part of the manual can be excluded (CORR, GRAY, 1996). The implementation of self-control begins with the second part of the manual, which contains questions to the information text and selective answers to them, which the student must analyze. The question is preceded by a portion of information that focuses on a certain part of the previously studied material and from which the question consistently follows.

Working with the second part does not involve the acquisition of new knowledge, but allows the student to adjust previously acquired knowledge (in lectures, practical classes, etc.) with those he mastered during the study of the information text presented in the first part. After selecting and analyzing the answer, the student applies for confirmation to the third part of the manual - consultations-comments to the proposed answers to the questions posed in the previous part (REDCHUK, DOROSHENKO, HAVRYLIUK, MEDYNSKII, SOICHUK, PETRENKO, PAVELKIV, RYBALKO, MALIAR, MALIAR, CHORNODON, BORETSKYI, 2020).

Consultations should be designed so that in the case of confirmation of the plausibility of the answer, they further develop the proposed opinion, in the case of error, it helps to find the right path and identify inaccuracies. Self-control with the help of consultations gives the chance to comprehend a mistake and to eliminate it independently. It should be emphasized that these materials do not serve as a test for knowledge control, because they are designed to enhance the cognitive process. However, in this case, a methodical task is performed: without understanding the issue, the student will not receive new reports. Understanding this forces him to be attentive to questions.

When making decisions and rejecting incorrect answers, the student is faced with the need not just to assimilate information, but to analyze it, to exclude the insignificant, to draw conclusions and thus to approach the correct answer to the question. The student is involved in an active cognitive process, accompanied by the formation of techniques of independent mental activity. As report forms can be the following:

- assessment of oral answers to questions, reports, reports in practical classes;
- solving situational problems in practice-oriented disciplines;
- a synopsis made on a topic studied independently;
- the texts of control, course works and their protection are presented;
- report on the internship, response and qualification description signed by the head of the internship base and the curator of the internship;
- testing, performing written tests on the research topic;
- modular-rating system of assessment of students' knowledge by blocks (sections) of the studied discipline, cycles of disciplines;
- successful passing of current course, cycle and complex examinations and tests, including the state interdisciplinary complex examination in general-professional and special disciplines;
- defense of final qualification (diploma) work;
- articles, abstracts and other publications in scientific, popular science, educational publications on the results of independent work and research work, published by the decision of the department or faculty (ASTREMSKA, HONCHARUK, BIALYK, HORBATIUK, MARTYNYSHYN, PIDLYPSKYI, 2021).

It is extremely useful to use programmable materials and computer training programs. Observations show that, in addition to individualization, they tend to increase interest in the subject and provide stronger and deeper knowledge. The correct organization of independent work of students is promoted by the control realizing educational, educational and prognostic functions of teaching in educational process. As one of the forms of checking
and assessment of the acquired knowledge, control at the same time allows to solve a complex of educational tasks:

- receive information about the nature of cognitive activity, levels of independence of students;
- get information about the effectiveness of methods, forms and methods of educational activities;
- to correlate the plan, process and results of activity;
- ensure compliance with certain patterns of activity;
- adhere to restrictions in behavior and activities, violation of which may adversely affect the results of activities;
- observe the work of students in order to adjust their activities.

There are many forms of control (review of lecture notes, control weeks, colloquia, tests, testing, rating, pair control, mutual control), and they must be brought into the system. To do this, a general schedule is drawn up, which gives an independent controlled work a holistic character. Drawing up such schedules and grading students for tasks allows them to see in the course of the educational process which student copes with the task in training and which does not, what knowledge and skills he has already mastered, what he has yet to master (IASECHKO, SHELUKHIN, MARANOVA, 2021).

The control by the teacher should be supplemented by self-control and self-assessment of the student. There are several stages of self-control in relation to the assimilation of the material. The first is the lack of any control. The student has not mastered anything, so he cannot control anything. This is clearly observed when the student does not regularly prepare for classes, does not do them, does not answer questions. In this case, the teacher calls him for a consultation, helps to make a work schedule and form an evaluative action. The second stage is complete self-control. In this case, the student checks the correctness and completeness of the reproduction of the studied material. He expresses an evaluative judgment, determines the quality of assimilation, he is able to correct inaccuracies. In the third stage, selective self-control is carried out. Only the main thing is controlled. The student thinks over the order of filling in the gaps. The fourth stage - hidden self-control, lack of visible control. At the same time - a high level of preparation for classes, independent work. Answers and evaluative judgments of students are characterized by logic, argumentation, completeness.

There are methods of operational control of knowledge. "Creative five minutes" are held at the lectures: at the end of the lecture students are asked a question that checks the mastery of the material they have just listened to. Simple versions of machine-free programmable control are used. For example, when checking the result of independent work to study the essence of the educational task and the requirements for its formulation, questions are asked: "How do you understand the" educational task "? This is the direction of educational work; action program ". The answer that accurately reflects the essence of the educational task, there is only one. The test, which includes 5-6 such questions, takes no more than 15 minutes (SARNAVSKA, YAKOVYSHyna, KACHMAR, SHERMAN, Shadiuk, Koberaska, 2021).

Effective interactive control computer programs that allow not only to identify gaps in students' knowledge, but also to analyze characteristic errors, classify them, issue individual recommendations to students about the need to repeat specific material of the program. They give teachers generalized information about the dynamics of the process of mastering the material, the state of mastering certain sections of courses in each group and at the faculty as a whole. Quite a wide range of options allows you to use the program for self-monitoring at any time convenient for the student. In this case, it is advisable to use tests (PETERSON, BARRETT, 1987).

If the multilevel educational system widely introduces free choice in all types of educational activities, then immediately there is a problem of selection of an adequate control system.
Experience shows that the most effective is the rating system, which has the potential to overcome the shortcomings of the traditional control system (subjectivity, weak differentiation, etc.). Rating can be entered for one discipline, one course, one specialty, faculty, university. For its implementation, a significant amount of preparatory work must be done (CORR, GRAY, 1996).

**RESULTS AND DISCUSSION**

These measures are aimed at increasing the motivation of students to master academic competencies, to develop their intellectual and creative, reflective abilities, cognitive interests. The result of the application of these measures is the formation of an individual style of activity, eliminating the gap between the process of learning and their practical application.

The system of these measures includes modeling the situation of success, setting prospects (acquaintance with models of career growth), identifying self-limitations that become psychological barriers to mastering competencies. The role of counseling is especially important, motivating students to study, convincing that without specific knowledge about educational activities, the future professional cannot happen. Counseling is an important means of psychological support for the process of competence formation. If students do not come to the consultation - this is a sign of poor methods of its organization, an indication that they are passive in independent work in this discipline or are not prepared for it. For this work you can choose from students assistants, consultants. These are “experts” on separate problems of a course, with them separate work is carried out. Students prepare questions on several issues, and consultants answer them. Both answers and questions are evaluated. The nature and depth of student questions are an indicator of interest in the subject and the level of their readiness for independent activity.

The ability to formulate questions competently and correctly is one of the most important skills of self-government by cognitive activity. The question is a form of expression of the “ignorance” that must be filled in the process of solving a creative task (independent work). It is possible to purposefully develop this skill at any form of the organization of educational process. Thus, in the lecture the teacher himself formulates its structure to show the direction of the search for the answer; in seminars, students compose questions from the lecture, etc. At the same time, the nature of the issue is analyzed - reproducing, clarifying, aimed at obtaining new information, to identify cause-and-effect relationships. As means of stimulation we use collective consultations (explanation of the general requirements, ways of training, the message on results of diagnostics) (YOVENKO, NOVAKIVSKA, SANIVSKYI, SHERMAN, VYSOCHAN, HNEDKO, 2021).

One of the sources of development of positive motives for independent work (and learning in general) is in the relationships that develop between the participants in the learning process. For the purpose of their development it is recommended to use various forms of educational work of students (group, frontal, individual). Successful mastering of technology of independent work is promoted, as experience shows, work in static, dynamic, variational pairs on performance of various tasks:

- rate each other,
- ask a work partner to check the quality of the task,
- to continue the work started by the neighbor,
- ask another question
- conduct peer review.

Combining these forms in different classes, using the opportunity to include each student in the role of teacher, delegating part of their functions to students - all this develops not only the ability to work independently, but also the ability to work in a group. Thus, the implementation of these organizational and pedagogical, methodological and psychological measures in the process of teaching and research work of students will help, in our opinion, to form academic competencies in students (IASECHKO, M., IASECHKO, S., SMYRNOVA, I., 2021).
CONCLUSION

The article conducted a study where one of the negative reasons that affect the dynamics of growth of academic competencies was identified. This reason is primarily due to the shortcomings of computerization of the educational process: the lack of sufficient methodological support for working with computer programs for educational purposes. The conducted research work, quantitative and qualitative analysis of its results allowed to make the following intermediate conclusions:

When developing the pedagogical support of the educational process, attention should be paid not only to the improvement of teaching methods, but also to the methods of organization, psychological and pedagogical support of students' independent work. Success in the organization of independent work as the main means of formation of academic competencies largely depends on the extent to which the teacher himself has modern educational technologies, including in the field of self-education.

The task of forming academic competencies cannot be solved within one discipline, by the efforts of one or more teachers: a systematic approach of all teachers is required. The greatest difficulties are experienced by students in the formation of speech competencies, the basis of which is largely laid in high school. To overcome difficulties, to develop these competencies, it is advisable to intensify the use of dialogic teaching methods, to involve students more widely in mastering their peers, in reviewing, to involve students in oral presentations with reports, reviews, abstracts, articles and other forms of presentation of results. Research work (for example, participation in teleconferences, preparation and presentation of computer presentations).

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Innovative approaches in the organization of independent work of applicants for higher education in the conditions of information educational environment

Abordagens inovadoras na organização do trabalho independente dos candidatos ao ensino superior nas condições do ambiente educacional de informação

Enfoques innovadores en la organización del trabajo independiente de los solicitantes de educación superior en las condiciones del entorno educativo de información.

Resumo
O artigo considera que a organização do trabalho autônomo, como principal meio de formação de competências, depende em grande parte do quanto o professor possui modernas tecnologias educacionais, inclusive no campo da autoeducação. Verificou-se que as tarefas de formação de competências não podem ser resolvidas dentro de uma disciplina, pelo esforço de um ou mais professores: é necessária uma abordagem sistemática de todos os professores.


Abstract
The article considers the organization of independent work as the main means of forming competencies largely depends on the extent to which the teacher has modern educational technologies, including in the field of self-education. It was found that the tasks of competence formation cannot be solved within one discipline, by the efforts of one or more teachers: a systematic approach of all teachers is required.

Keywords: Needs. Postmodern model. Cognitive activity. Distance learning. Professional development.

Resumen
El artículo considera que la organización del trabajo independiente como el principal medio de formación de competencias, depende en gran medida de la medida en que el docente cuente con tecnologías educativas modernas, incluso en el campo de la autoeducación. Se encontró que las tareas de formación de competencias no se pueden resolver dentro de una disciplina, con el esfuerzo de uno o más profesores: se requiere un enfoque sistemático de todos los profesores.